

## *THE DISINFECTANTS/DISINFECTION BY-PRODUCT RULE*

### **BACKGROUND**

The Stage 1 Disinfectants/Disinfection Byproduct Rule (D/DBPR) was published in the Federal Register on December 16, 1998. The goal of this rule was to balance risks through the protection from both microbial pathogens and disinfection byproducts. Additional rules are expected to follow.

### **APPLICABILITY**

This rule applies to Community Water Systems and Non-transient, Non-community Water Systems that treat their water with a chemical disinfectant for either primary or residual treatment. The rule also applies to all systems, including Transient, Non-community Water Systems, that apply chlorine dioxide.

### **COMPLIANCE DATES**

- Large Subpart H Systems (Surface water systems serving >10,000 persons): **December 2001**
- Small Subpart H Systems (Surface water systems serving < 10,000 persons) and all Ground Water Systems: **December 2003**
- Systems installing GAC or membranes may apply to the State for extensions up to 24 months but not to exceed 60 months.

### **DRINKING WATER STANDARDS**

#### **MCLs for TTHMS and HAA5**

Under Stage 1 DBPR, old requirements for TTHM (0.10 mg/L) will be phased out with the rule compliance dates (December 2001 and 2003). The new TTHM standard will be 0.080 mg/L. The MCL for Haloacetic Acids (HAA5) will be 0.060 mg/L.

### **DEFINITIONS**

#### **Maximum Residual Disinfectant Level (MRDL)**

The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects.

#### **Maximum Residual Disinfectant Level Goal (MRDLG)**

The maximum level of a disinfectant added for water treatment at which no known or anticipated adverse effect on human health would occur, with an adequate margin of safety.

#### **Subpart H Systems**

Public water systems using surface water or ground water under the influence of surface water as a source that are subject the requirements of Subpart H {Surface Water Treatment Rule} of this part. Large Subpart H systems are surface water systems serving >10,000 persons.

**The Disinfectants/Disinfection By-Products Rule will require water systems to meet the following requirements:**

### **General Requirements**

**Public Notification:** Mandatory health effects language for chlorine, chloramines, chlorine dioxide, DBPs and Treatment Technique for DBPs, Bromate, and Chlorite, for systems that exceed MCLs for DBPs or MRDLs for disinfectants. The specified language may change under the PN Rule.

**System Operators:** Each CWS and NTNCWS regulated by this section must be operated by qualified personnel who meet the requirements specified by the State and are included in a State register of qualified operators.

**Sampling Requirements:** Must take all samples during normal operating conditions. May consider multiple wells drawing from same aquifer as one plant for determining minimum number of samples required with State approval. Failure to monitor in accordance with the system's monitoring plan is a monitoring violation. Failure to monitor will be treated as a violation for entire period covered by annual average where compliance is based on running annual average of monthly or quarterly samples or average and system's failure to monitor makes it impossible to determine compliance with MCLs or MRDLs. System may only use data collected under these provisions or Subpart M (Information Collection Rule) to qualify for reduced monitoring.

**Monitoring Plans:** Each system required to monitor must develop and implement a monitoring plan. The plan must be maintained and made available for State inspection and the general public no later than 30 days following the compliance date. The plan must include: (1) locations for collecting samples; (2) how systems will calculate compliance with MCLs, MRDLs, and treatment techniques; and (3) reflective of the entire distribution system. The State may require changes in any plan element. Subpart H systems serving over 3,300 people must submit this Plan to the State. The State may require any other system to submit plan.

**Required Additional Health Effect Information:** CWSs that detect TTHM above 0.080 mg/L but below the 1979 MCL (as an annual average) must include health effect language prescribed by paragraph (73) of Appendix C to Subpart O (Consumer Confidence Rule).

**Reporting and Recordkeeping:** Systems required to sample quarterly or more frequently must report to the State within 10 days after the end of each quarter. Systems required to sample less than quarterly must report to the State within days after the end of each monitoring period in which the samples were collected. The State may choose to perform calculations and determine compliance with MCLs, MRDLs, and treatment technique.

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## **CHLORINE**

MRDLG (4 mg/L - for each chemical)

MRDL (4 mg/L - for each chemical)

**Control of Disinfectant Residual:** Notwithstanding MRDLs, systems may increase residual disinfectant levels in the distribution system to a level and for a time necessary to protect public health to address specific microbial contamination problems caused by circumstances such as (but not limited to) distribution line breaks, storm run-off events, source water contamination

**Best Available Technology (BAT):** Control of treatment processes to reduce disinfectant demand and disinfectant levels

## **Analytical Methods**

Free chlorine: 4500-Cl D, 4500-Cl F, 4500-Cl G, 4500-Cl H

Combined chlorine: 4500-Cl E, 4500-Cl F, 4500-Cl G

Total chlorine: 4500-Cl D, 4500-Cl F, 4500-Cl G, 4500-Cl H, 4500-Cl I

**The State can approve the use of DPD colorimetric test kits.**

## **Monitoring Requirements**

Routine: Systems must measure residual disinfectant levels at same point in distribution system and at the same time that total coliforms are sampled.

Reduced Monitoring: No reduced monitoring

## **Compliance**

**Quarterly Compliance Determinations:** MRDL compliance based on running annual arithmetic average of monthly averages of all samples collected by the system. If the average of quarterly samples for any consecutive 4-quarter period exceeds MRDL, system is in violation and must notify public and report to the State. If system switches between use of chlorine and chloramines, compliance must be determined by including together all monitoring results of both chlorine and chloramines in calculating compliance

## **Reporting and Recordkeeping**

- Number of samples taken during each month of last quarter
  - Monthly arithmetic average of all samples taken in each month for the last 12 months
  - Arithmetic average of all monthly averages for last 12 months
  - Whether MRDL was exceeded
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## **Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5)**

MCL for TTHM: 0.080 mg/L

MCL for HAA5: 0.060 mg/L

MCLGs for TTHM: Chloroform (0 mg/L)  
Bromodichloromethane (0 mg/L)  
Bromoform (0 mg/L)  
Dibromochloromethane (0.06 mg/L)

MCLGs for HAA5: Dichloroacetic acid (0 mg/L)  
Trichloroacetic acid (0.3 mg/L)

## **Best Available Technology:**

Enhanced coagulation/enhanced softening of GAC 10 with chlorine as the primary and residual disinfectant.

## **Analytical Methods**

TTHM: EPA 502.2, 524.2, 551.1

HAA5: EPA 552.1, 552.2, Standard Method 6251 B

## **COMPLIANCE**

**Quarterly Monitoring:** MCL compliance based on running annual arithmetic average computed quarterly. If running average of any consecutive 4-quarter period exceeds MCL, system is in violation and must notify public and report to the State. If PWS fails to complete 4 quarters on monitoring, compliance must be based on average of available data.

**Less Than Quarterly Monitoring:** MCL compliance based on average of samples taken during the year. If average exceeds MCL, system must increase monitoring to once per quarter per plant.

**Systems Conducting Reduced Monitoring:** Must revert to routine monitoring if TTHM annual average > 0.060 mg/L or HAA5 annual average > 0.045 mg/L. Systems will not be considered in violation of MCL until they have completed 1 year of quarterly monitoring.

## **REPORTING AND RECORDKEEPING**

### **System monitoring on a quarterly or more frequent basis must report:**

- Number of samples taken during the quarter
- Location, date, and results of each sample taken in last quarter
- Arithmetic average of all samples taken in last quarter
- Annual arithmetic average of quarterly averages for last 4 quarters
- Whether MCL was exceeded

### **System monitoring less frequently than quarterly but at least annually must report:**

- Number of samples taken during the last year
- Location, date, and results of each sample taken in last year
- Arithmetic average of all samples taken in last year
- Whether MCL was exceeded

### **System monitoring less frequently than annually must report:**

- Location, date, and results of last sample taken
- Whether MCL was exceeded

## **STATE REQUIREMENTS**

### **Records Kept by States**

- (1) Must keep records of currently applicable or most recent State determinations
- (2) Must include all supporting information and explanations of the technical basis for each decision
- (3) Must include interim measures toward GSC/membrane installation
- (4) Records of systems installing GAC or membrane technology including required date of installation completion
- (5) Records of systems that are required by the State to meet alternative minimum TOC removal requirements or for whom the State has determined that source water is not amenable to enhanced coagulation, including alternative limits and rationale for establishing alternative limits
- (6) Records of Subpart H systems using conventional treatment meeting any of the enhanced coagulation or enhanced softening exemption criteria
- (7) Register of qualified operators
- (8) Records of systems with multiple wells considered to be a single treatment plant
- (9) Sampling plans for Subpart H systems serving more than 3,300 people
- (10) List of laboratories approved for analyses
- (11) List of systems required to monitor for disinfectants and DBPs. *Do not have to report systems with standard requirements (chlorine, TTHM, HAA5)*

### **Special Primacy Requirements -State must tell EPA how it will:**

- (1) Determine any interim treatment requirements for those systems electing to install GAC or membrane filtration and granted additional time to comply
- (2) Quality operators of PWSs
- (3) Approve DPD colorimetric test kits for free and total chlorine measurements
- (4) Approve parties to conduct pH, bromide, alkalinity, and residual disinfectant concentration measurements
- (5) Define criteria to determine if multiple wells are being drawn from a single aquifer and may be considered a single source for compliance with monitoring requirements
- (6) Approve alternative minimum TOC removal requirements.

## **REMINDER AND UPDATE ON THE CAPACITY DEVELOPMENT PUBLIC INFORMATION MEETINGS**

The Safe Drinking Water Act Amendments of 1996 require each State to develop and implement capacity development plans for public water systems to enable systems to consistently provide safe drinking water. Specifically, a plan for new public water systems and a plan for existing public water systems are required.

The Safe Drinking Water Branch (SDWB) of the Department of Health drafted the capacity development plans with the help of a stakeholder group representing eight different organizations. The proposed plans are now available for review.

We are inviting federal, state and county agencies, public water systems, schools, businesses, water system customers, and interested individuals to comment on the proposed plans.

A copy of the plans will be mailed to each public water system purveyor. Copies of the plans may also be obtained by calling or writing to:

Safe Drinking Water Branch  
919 Ala Moana Boulevard, Room 308  
Honolulu, HI 96814  
Telephone No. (808) 586-4258  
FAX No. (808) 586-4370

Written comments may be mailed to the Safe Drinking Water Branch on O`ahu at the above address, sent by FAX (FAX No. (808) 586-4370) to the SDWB Honolulu Office, or submitted in person at one of our informational meetings on the major islands.

Public informational meetings to discuss the plans will be held on O`ahu, Maui, Kaua`i, and Hawai`i (Hilo and Kona) at the following locations, times and dates:

O`AHU	May 25, 1999 at 10:00 a.m., Safe Drinking Water Branch, Fifth Floor Conference Room, 919 Ala Moana Blvd., Honolulu
MAUI	May 26, 1999 at 10:00 a.m., State Building, Third Floor Conference Room B, 54 High Street, Wailuku
KAUA`I	May 27, 1999 at 10:00 a.m., Conference Room at the Department of Health Building, Kaua`i District Health Office, 3040 Umi Street, Lihue
KONA	June 1, 1999 at 9:00 a.m., Department of Transportation, Conference Room - Airport Administration Building (before Aloha Airline's terminal), Kona International Airport
HILO	June 1, 1999 at 1:00 p.m., Conference Room at the Department of Health Building, 1582 Kamehameha Avenue, Hilo
MOLOKA`I & LANAI	Please forward comments to the SDWB in Honolulu. A meeting may be scheduled if sufficient water systems are interested. Comments may also be discussed with SDWB staff if desired.

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**The following is an update to the announcement of the statewide public information meetings on the capacity development program.**

The Safe Drinking Water Branch (SDWB) is sending a letter to all water purveyor's along with the following documents:

- (1) EPA's final Guidelines on Operator Certification;
- (2) Measures proposed by the SDWB to comply with each requirement in EPA's Guidelines; and
- (3) Measures proposed by the SDWB for Hawai`i's operator certification program for water purveyors and operators, including who needs to be certified.

**A limited number of copies of these documents will be available at the public information meetings.**

Safe Drinking Water Branch staff will be present at the capacity development public information meetings to:

- (1) Highlight EPA's requirements for the certification of operators of public water systems;
- (2) Explain the department's proposal on how the State will comply with EPA's requirements; and
- (3) Respond to questions from the floor and, if available, written comments to SDWB on the proposed program.

If you have any questions regarding operator certification issues, please contact Larry Whang at (808) 586-4258.

## ***SDWB COMPLETES FIRST CONSUMER CONFIDENCE REPORT TRAINING SESSION***

On May 18th and 19th, the Safe Drinking Water Branch completed its first consumer confidence report (CCR) training session in Hilo. The training session was attended by 13 participants representing the Hawai'i Department of Water Supply, small water systems in East Hawai'i, a water consultant working on CCRs for several water systems, staff from an O'ahu water system (who wanted to get a head start on the CCRs), and several non-community water systems (even though they are not required to prepare CCRs). The first day consisted of presentations on what is a CCR, key CCR implementation dates, report content requirements, delivery delivery and recordkeeping requirements for the CCR, interpretation of data to be used in the CCRs, and state requirements for meeting the CCR rule. Participants also participated in two exercises to review monitoring data and then determine what information need to be included in the CCR. The second day an optional day spent answering questions and working with the various water systems in preparing their CCRs. There were 7 participants who attended the second day.

## ***YOU CAN STILL ATTEND A CONSUMER CONFIDENCE REPORT TRAINING SESSIONS***

The Safe Drinking Water Branch continues to conduct consumer confidence report training sessions to to assist the public water systems in complying with this requirement. The training sessions will assist the public water systems in understanding the requirements of the consumer confidence report rule, as well as assist the public water systems in preparing the report.

All public water systems are invited to attend these training sessions. Training sessions will be held as follows:

<b>Kaua'i:</b>	<b>June 3-4</b>	<b>Kaua'i War Memorial Convention Center</b>
<b>Kona:</b>	<b>June 9-10</b>	<b>DOT Conference Room, Airport Administration Building, Kona International Airport</b>
<b>Maui:</b>	<b>June 16-17</b>	<b>State Building, Third Floor Conference Room B, 54 High Street, Wailuku</b>
<b>Moloka'i:</b>	<b>June 24-25</b>	<b>Kaunakakai Civic Center, Phase I Conference Room, 45 Makaena Place</b>
<b>O'ahu:</b>	<b>July 1-2</b>	<b>DOH Laboratory, Pearl City (moved from the 919 Ala Moana Blvd., 5th Floor Conference Room due to the construction activities for the Ward Avenue Expansion)</b>

To assist us in planning the training sessions, please contact the Safe Drinking Water Branch to request a registration form. The registration form should be returned at least 7 working days prior to the selected training session to:

Safe Drinking Water Branch  
Department of Health  
919 Ala Moana Blvd., Room 308  
Honolulu, HI 96814  
Attention: Consumer Confidence Report Training

or FAX the registration form to us at (808) 586-4370.

You will be considered confirmed for the training unless contacted otherwise. No confirmation letters will be sent to training registrants. The training will begin at 9:30 a.m. on the first day of each session.

If you have any questions regarding the training sessions, please contact Daniel Chang of the Safe Drinking Water Branch in Honolulu at 586-4258 or call direct from your island on our toll-free numbers, ext. 64258: 974-4000 from Hawai'i, 984-2400 from Maui, 274-3141 from Kaua'i and 1-800-468-4644 from Moloka'i and Lana'i.

## ***Odds 'n Ends***

- (1) The Safe Drinking Water website has been moved, you can now visit our site at: <http://www.hawaii.gov/doh/eh/sdwb>
- (2) At the request of the USEPA, Region 9, this newsletter is now being made available to the Pacific Island territories. We welcome our new readers from Guam, Commonwealth of the Northern Marianas Islands, Palau, and American Samoa.
- (3) "The Water Spot" is now distributed to over 500 people representing the drinking water industry and other interested individuals.

*The Water Spot is published by the Safe Drinking Water Branch, Environmental Management Division of the Hawai'i State Department of Health and is distributed to water purveyors, water system operators, staff, consultants, and other interested parties.*

*The Water Spot may also be viewed on the Safe Drinking Water Branch's web site at <http://www.hawaii.gov/doh/eh/sdwb>*

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*Please send your  
suggestions, ideas  
or comments to:*

**THE WATER SPOT NEWSLETTER**  
*Safe Drinking Water Branch  
State Department of Health  
919 Ala Moana Blvd., Room 308  
Honolulu, Hawaii 96814*

**OR** Fax us at (808) 586-4370, Attention: **"THE WATER SPOT"**

**SDWB WEB SITE:**

<http://www.hawaii.gov/doh/eh/sdwb>

**HISWAP WEB SITE:**

<http://www.aloha.net/~will/hiswap.html>

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